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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,147	06/20/2001	Zhenghe Han	208473US3PCT	6315

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EXAMINER

HARAN, JOHN T

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 02/13/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/856,147

Applicant(s)

HAN, ZHENGHE

Examiner

John T. Haran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.
2. The disclosure is objected to because of the following informalities: On page 3, line 6 it is unclear what document the page and line numbers are referring to.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because it is entirely unclear what is being claimed. It is suggested to amend the claim as follows to more clearly and distinctly indicate what is being claimed:

A method of producing a high T_c superconducting tape or wire comprising:
providing a superconducting core;
placing a metal sheath around the superconducting core;
performing a plurality of annealing steps; and
applying a surface layer that modifies the properties of the wire/tape after the final annealing step.

It is noted that the terminology "an additional surface layer" is confusing because it is unclear what is considered the previous surface layer.

Claim 6 recites the limitation "the coating material" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitation "surface layers" in line 1. There is insufficient antecedent basis for this limitation in the claim. Also "graphit" should be spelled - - graphite - -. It is also noted that the specification lacks antecedent basis for this claim and accordingly the specification should be amended to incorporate the subject matter of claim 7. In addition it is unclear if the surface layers referred to is meant to be just the additional surface layer or the metal sheath as well.

Claim 8 recites the limitation "the insulating layer" in line 1. There is insufficient antecedent basis for this limitation in the claim. Also "spaying" should be spelled - - spraying - -.

Claim 9 recites the limitation "the coating" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato (EP 449,316).

Sato is directed to a method of making a high T_c superconducting wire wherein a superconductor core is covered with a metal sheath and a plurality of annealing (heating) treatments are performed (page 4, lines 15-16 and 43-45). After the final heat treatment the superconducting wire is coated with an organic material to stabilize the superconducting wire against bending (page 4, lines 49-51 and page 3, lines 30-31).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2 and 4-7 rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (EP 449,316) in view of the admitted prior art and Shiga et al (U.S. Patent 5,926,456).

Regarding claims 2, 6 and 7, Sato is silent towards applying an electrically insulating layer, it is well known and conventional to electrically insulate superconducting wires as shown for example by both the admitted prior art (Specification, page 10-16) and Shiga et al (Column 7, lines 42-44 and 64-66) teach electrically insulating superconducting wires. Furthermore Shiga teaches applying an electrically insulating Teflon tape after the annealing of the wire. In addition it is common practice to include fibers, metallic particles, ceramic powder, carbon, and graphite in insulating layers. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply a surface layer that electrically insulates

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the superconducting wire after the annealing steps in the method of Sato, as suggested in the admitted prior art and Shiga et al.

Regarding claims 3-4, Sato is silent towards the coating being low friction however, the admitted prior art teaches applying a low friction layer to superconducting wires (specification page 2, lines 11-12), but is silent towards the layer being Teflon. It is known to apply a Teflon surface layer to superconducting wires after the annealing steps, as shown for example in Shiga et al (Column 7, lines 42-44 and 64-66) and it is also known that Teflon has a low coefficient of friction. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply a surface layer of Teflon to the superconducting wire after the annealing steps in order to create low friction in the method of Sato, as suggested in the admitted prior art and Shiga et al.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (EP 449,316) in view of the admitted prior art and Hall et al (U.S. Patent 5,999,383).

Sato is silent towards the coating providing a surface layer having a colored or marked surface that distinguishes it, however it is generally well known and conventional to provide a surface layer that marks or colors in order to distinguish it from other wires, as shown for example in the specification (Specification page 1, line 17 to page 2, line 5) and Hall et al (Column 4, lines 4-6). One skilled in the art would have readily appreciated applying the distinguishing color or mark after the wire is annealed in order to avoid damage from the annealing steps. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply a

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surface layer that colors or marks the wire in order to distinguish it after the annealing steps in the method of Sato, as suggested in the admitted prior art and Hall.

9. Claims 1-2 and 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zahora et al (U.S. Patent 6,021,338) in view of Sato (EP 449,316).

Zahora et al is directed to a method of coating an already formed high Tc superconducting wire comprising a superconducting core surrounded by a metal sheath with a UV curable coating that forms an electrically insulating layer around the wire (Column 1, lines 54-62; Column 2, lines 55-60). Zahora et al is silent towards the method of forming the high Tc superconducting wire including a plurality of annealing steps, however such is well known and conventional in the art, as shown for example in Sato (page 3, lines 15-16 and 43-45). It would have been obvious to having formed the high Tc superconducting wire through a plurality of annealing steps in the method of Zahora et al as suggested in Sato.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

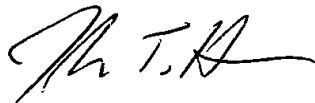
Sato et al (U.S. Patent 6,205,345) is the US version of EP 449,316.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John T. Haran** whose telephone number is **(703) 305-0052**. The examiner can normally be reached on M-Th (8 - 5) and alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael W. Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



John T. Haran

February 7, 2003


Michael W. Ball
Supervisory Patent Examiner
Technology Center 1700